

Docket No. F-8488

Ser. No. 10/517,895

REMARKS

Claims 3, 5-12, and 14-21 remain pending in this application. Claims 3, 8, 9 and 12-21 are rejected. Claims 1, 2, 6 and 13 are previously cancelled. Claims 5, 7, 8 and 9 are cancelled herein. Claims 3, 11, and 21 are amended herein.

CLAIM OBJECTIONS

Claim 11 is objected to due to various informalities including awkward wordings. The claim is amended to address the objection. In particular the language regarding the hub wheel is amended to read as "an outer circumferential portion" and "inner raceway" groove and diameter. With regard to the non-rolling element, the wording is revised to recite "outer raceway grooves." Accordingly withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102(b)

Claims 3 and 21 are rejected under 35 U.S.C. §102(b) as being anticipated by the Watanabe reference. Applicant herein respectfully traverses these rejections. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*,

Docket No. F-8488

Ser. No. 10/517,895

221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). It is respectfully submitted that the cited reference is deficient with regard to the following.

It is respectfully submitted that the rejection is unsustainable because the "inner ring" of claim 3 is inappropriately being read on the shaft portions 12 and 29 of the Watanabe reference. This is clearly inappropriate as the term "inner ring of a bearing" is a well known term of art that does not apply to the shaft. Furthermore, the shaft portions 12 and 29 clearly not be read as inner rings because the Watanabe reference teaches the inner rings as 17a and 18a are discrete parts with respect to the shaft 12 and 29.

Still further, the inner rings 17a and 18a of Watanabe do not have flat portion as required by claim 3. The rotor is required to have a flat portion on the circumferential surface by the following language:

said rotor comprising a flat portion on a portion of a circumferential surface of said inner ring which opposes said plurality of polar teeth and is an outer peripheral shoulder of said inner ring.

The rotor is also required to be the inner ring by the recitation "a rotor provided as part of said inner ring." Likewise, claim 21 recites:

said rotor is formed of the inner ring and includes a flat portion of an outer circumferential surface of the inner ring.

Docket No. F-8488

Ser. No. 10/517,895

The Examiner cites as a rotor "(29) in combination with the flat portion of (12) that (29) is attached to." This does not conform at all to the claim language and it is not understood what "flat portion" is considered to oppose the polar teeth which in anyway may be considered to be on a surface of the inner rings. Indeed, the Watanabe reference clearly states that the stator 15 opposes the rotor 16. These are clearly not part of the inner rings 17a and 18a. The Watanabe reference further states that the teeth are disposed in the surface of the rotor magnetic poles 16 which are nowhere near where the alleged "flat portion" is thought to exist. Indeed, it is not all clear what the "flat portion" is considered to be. Every element referred to by the Examiner appears to be cylindrical thus lacking any flat portion that may oppose the teeth in the rotor 16. It is respectfully requested that the Examiner explain the basis for this portion of the rejection in detail should this rejection not be withdrawn.

The Examiner's reading distorts the structure of the Watanabe reference and it is submitted that the Watanabe reference cannot form a basis for an anticipation rejection for this reason. Anticipation requires the claim read on the structure as shown in the reference. The claims clearly do not read on the structure for the reasons noted above, including Examiner improperly reading the rotor on portion 12 while the rotor is actually part 16.

Docket No. F-8488

Ser. No. 10/517,895

In view of the above, it is respectfully submitted that claims 3 and 21 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 3 and 21 and their allowance are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 5, 7, 8 and 9 are rejected as obvious under 35 U.S.C. §103(a). These claims are now cancelled rendering the rejections moot.

Claims 3, 19, 20 and 21 are rejected under 35 U.S.C. §103(a) as obvious over the Rigaux reference in view of the Watanabe reference. The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

It is respectfully submitted that these rejections are deficient for the same reasons as the above anticipation rejection with regard to claims 3 and 21. Since the additional Rigaux reference does not provide the teachings noted absent from the Watanabe, it cannot render obvious the claims.

Docket No. F-8488

Ser. No. 10/517,895

With regard to the Rigaux reference, it is submitted that the Examiner improperly interprets the cylindrical portion 19 or the ring 27 of the Rigaux reference as flat portions when they are not. There is no flat portion which opposes the stator 17. If the Examiner is referring to the straight edge that reference designator line 27 is directed to, the Examiner is reminded that the figures are cross sections taken in an axial direction. Hence, the straight edge is merely the surface of a cylindrical shape and hence not a flat portion. Instead, the Rigaux reference teaches a cylindrical encoder 19 that does not employ flat portions on an outer circumference but instead employs spaces in magnetic material of ring shaped part 20. Furthermore, the Rigaux reference makes readily clear that the encoder is not part of a bearing ring by specifically reciting that "[t]he encoder 19 is fixed on the two inner races 12 and 13." It is well known that inner rings and inner races of bearing are synonymous expressions.

The rejection is further misdirected in that the teeth of the claims are read on teeth 24 which is part of the encoder 19, i.e., a rotor device, while the teeth in the claim are part of the stator. Thus, the teeth 24 referred to in the rejection cannot be part of a stator provided on the non-rolling element since part 24 is on the rolling element.

Each of the independent claims 3 and 21 require that the flat portion of the rotor be formed on a surface of the inner ring of the bearing. Further, claim 3

Docket No. F-8488

Ser. No. 10/517,895

requires that the teeth be on the stator of the non-rolling element while the teeth cited in the rejection are on the rolling element.

Thus, it is respectfully submitted that the rejected claims 3, 19, 20 and 21 are not obvious in view of the cited reference(s) for the reasons stated above. Further discussion of dependent claims 19 and 20 is therefore viewed as unwarranted at this juncture. Reconsideration of the rejections of claims 3, 19, 20 and 21 and their allowance are respectfully requested.

Claim 10 is rejected under 35 U.S.C. §103(a) as obvious over the Rigaux reference in view of the Watanabe reference and further in view of the Sakamoto reference. Claim 11 is rejected under 35 U.S.C. §103(a) as obvious over the Rigaux reference in view of the Sakamoto and Watanabe references. The applicant herein respectfully traverses these rejections

With regard to claim 10, it is submitted that the Rigaux reference is again relied upon for structure it does not teach. Claim 10 requires "said rotor being formed by at least one notch provided at an area on said intermediate circumferential surface of said hub wheel." In this regard the Examiner again relies upon the encoder 19 and the teeth 24 of the encoder 19. As noted above with regard to the inner race of prior claims, the Rigaux reference did not at all suggest that the inner races function as a rotor and instead applied an encoder 19

Docket No. F-8488

Ser. No. 10/517,895

over the inner races and formed the encoder of magnetic material different from the usual material of races. Claim 10 is even further removed from the structure taught by the Rigaux reference than the prior claims because it uses a notch on the circumferential surface of the *hub wheel* itself to form a rotor as part of the hub wheel. Claim 10 recites an inner ring which is mounted on the ring seat surface of the hub wheel. The ring seat surface is a different surface area than the intermediate circumferential surface on which is provided the claimed notch. Thus, the Rigaux reference teaches mounting an encoder on top of inner rings while the present invention provides a rotor including a notch apart from the inner ring area of the hub wheel and formed of the hub wheel surface itself. Thus, one would hardly be led to the structure presented in claim 10 by the Rigaux reference. The Sakamoto reference leads one even further away from the present invention by placing the sensing device at an axial end of the hub wheel and as completely discrete components from the hub wheel. Thus, this reference does not provide the teaching missing from the Rigaux reference and neither does the above discussed, grossly deficient Watanabe reference.

Claim 11 likewise includes the notches provided on the intermediate circumferential surface of the hub wheel and is thus similarly distinguishable over the applied references. Thus, it is respectfully submitted that the rejected claims 10 and 11 are not obvious in view of the cited references for the reasons stated

Docket No. F-8488

Ser. No. 10/517,895

above. Reconsideration of the rejections of claims 10 and 11 and their allowance are respectfully requested.

Claims 12 and 14-20 are rejected under 35 U.S.C. §103(a) as obvious over the Watanabe reference in view of the Okada reference. Applicants respectfully traverse these rejections.

The Examiner is attempting to combine the generating system of the Okada reference with the coil arrangement of the Watanabe reference. However, the proposed combination does not yield the invention of claim 12 because of the clear difference in functioning of the Okada reference from the claimed invention. The Okada reference provides, from the generator, a signal to indicating rotation. In other words, the generator of the Okada reference provides a signal indicating rotation position. Therefore, application of the signal of the Okada reference to yet another device for detecting rotation, as required by the pending claims, is simply superfluous. The Okada reference does not suggest powering other devices with the generating element but instead teaches using the generator output as a signal indicating rotation and not a power source to drive a rotation detector. Claim 12 specifically requires the following:

a generator for generating a voltage using energy provided by relative rotation of said rolling element relative to said non-rolling element and inputting the voltage as an input exciting voltage to said rotation detector[.]

Docket No. F-8488

Ser. No. 10/517,895

This voltage generated does not indicate rotation angle as does the output of the generator in the Okada reference. Instead, claim 12 requires both a generator rotor and stator, and also a rotation detector rotor and stator. It is the rotation detector itself which is powered with the exciting voltage. The stator has exciting windings and output windings which are separated and distinct from the rotor and stator of the generator. Claim 12 requires that:

said output windings output the induced voltage induced according to a gap permeance between said rotor and said stator in response to said exciting voltage inputted to said exciting winding.

Contrary to the teaching in the Okada reference, where the generator outputs a signal indicating rotation, the invention of claim 12 requires that the generator merely drive the exciting windings of the rotation detector and that the output windings of the rotation detector output the induced voltage which is induced according to gap permeance. This is a completely different functional arrangement from that disclosed in the Okada reference. Hence, the Okada reference could in no way suggest the combination of the claim since the Okada reference uses a generator to directly produce a rotation indicating signal while the present invention relies on the induced voltage varied by the gap permeance to signal rotation.

Claim 15 recites material similar to claim 14 in that it likewise requires:

Docket No. F-8488

Ser. No. 10/517,895

a generator for generating a voltage using energy provided by relative rotation of said rolling element and said non-rolling element, and inputting the voltage as an input exciting voltage to said rotation detector[.]

Claim 15 further requires the rotation detector arrangement of claim 14. Thus, it is respectfully submitted that the rejected claims 14 and 15 are not obvious in view of the cited reference(s) for the reasons stated above. Reconsideration of the rejection of the claims 14 and 15 and their allowance are respectfully requested.

Claims 16 through 20 are also rejected over the Watanabe reference in view of the Okada reference. It is respectfully submitted that the proffered combination of references cannot render the rejected claims obvious because the secondary Okada reference does not provide the teaching noted above with respect to the anticipation rejection that is absent from the primary Watanabe reference with respect to claims dependent from claim 3, and with regard to claims dependent from claims 12 and 14, the Okada reference is clearly deficient as noted above with regard to the rejection of claims 12 and 14. Thus, the combination of prior art references fails to teach or suggest all the claim limitations. Therefore, reconsideration of the rejections of claims 16-20 and their allowance are respectfully requested.

NEXT ACTION CANNOT BE MADE FINAL

Docket No. F-8488

Ser. No. 10/517,895

** It is further noted that the above discussed feature(s) of claims *** was/were present in the originally filed claims. As such, the present amendments cannot necessitate new grounds for rejection as the present rejections are respectfully submitted as failing to have been established.

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p).

MPEP 8th ed., rev. 7, §706.07(a) *Final Rejection, When Proper on Second Action.*

The terminology "necessitated by applicant's amendment" refers to amendments changing substance and not form. Since claim(s) as presently set forth contain no amendments changing substance that would necessitate new grounds because their subject is essentially identical to that of prior pending claim(s), and the grounds of rejections of those prior pending claims is submitted as having been overcome by the above arguments which does not change content of the claims, any new grounds of rejection set forth in relation to the noted claims cannot have been necessitated by present amendments. Accordingly, it is respectfully submitted that a next Office Action cannot be made final.